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EXAMINER

SHIMIZU, MATSUICHIRO

ART UNIT	PAPER NUMBER
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2635

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14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/387,804

Applicant(s)

SANDAHL, JOEL ERNEST

Examiner

Matsuichiro Shimizu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Response to Amendment after Final

The examiner acknowledges amended claims 1, 50, 53 and 57-58.

Response to Arguments

Applicant's arguments with respect to claims 1-61 have been considered but are moot in view of the new grounds of rejection.

Therefore, rejection of claims 1-61 follows:

Claim Rejections – 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. That is; "One-way paging units without RF transmission capability over a two-way paging network" in claims is not clearly stated in specification.

Claim Rejections – 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences

between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 18-31, 33-42, 45-51 and 53-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (5,924,042) in view of Gaulke et al. (5,802,470).

Regarding claim 1, Sakamoto discloses a system (Fig. 9, col. 21, line 34 to col. 22, line 65, a system associated with a mobile station (or pager) and caller; col. 10, lines 43-47, less urgent message or memo (or text) associated with level 2 or 3 priority to be sent to the pager after a time delay) for providing page messages to radio paging units over a wide area through a plurality of transmission systems in which each of said transmission systems are associated with a predefined coverage area in said wide area, said system comprising:

a controller having memory storing a routing database registering each of said paging units with one of said transmission systems (Fig. 9, col. 21, line 34 to col. 22, line 65, control apparatuses containing route or registration information associated with mobile unit or pager) in which said controller routes page messages received by said system to each of said paging units through one of said transmission systems to which the paging unit is registered in accordance with said routing database (Fig. 9, col. 21, line 34 to col. 22, line 65, control apparatuses containing routing database or registration information associated with mobile unit or pager), wherein the transmission system to which each of the paging units is registered represents the transmission system registered to the paging unit;

a plurality of transmission systems, each of said transmission systems having means for sending page messages received from the controller to paging units, and means for sending periodically a system message having at least information which uniquely identifies the transmission system (Fig. 9, col. 21, line 34 to col. 22, line 65, periodically sending the notice signal from the transmission associated with the base station);

a plurality of paging units for receiving the system messages of at least one of the transmission systems when located in the associated coverage area of said one transmission system and receiving the page messages from the transmission system registered to the paging unit when the paging unit is located in the coverage area of the transmission system registered to the paging unit (Fig. 9, note different coverage area (LRA1, LRA2, BS1, BS1 2..));

each of said paging units having ;means for determining when the paging unit receives at least one of the system messages sent by one of said transmission systems different from the transmission system registered to the paging unit, and means, responsive to said determining means, for sending to the controller at least the information uniquely identifying the transmission system from said received system message sent by one of said transmission systems different from the transmission system registered to the paging unit (col. 22, lines 29–38, if mobile station or paging unit is not in such state or cell, paging unit receives notice signal associated with transmission system identification) and

said controller having means, responsive to said sending means of each of said paging units, for updating the registration of the paging unit in the routing database to one of the transmission systems in accordance with the information received from the

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sending means of the paging unit (col. 22, lines 3–13, receive and transmit ID signal of pager), and sending to the paging unit at least information representing the updated transmission system registered to the paging unit (col. 22, lines 3–13, paging unit receiving the notice of signal transmitted periodically from the base station), in which the paging unit receives, and operates the determining means of the paging means responsive to, the information representing the updated transmission system (col. 22, lines 29–38, if mobile station or paging unit is not in such state or cell, paging unit receives notice signal associated with transmission system identification). But Sakamoto does not teach the paging unit, in which one or more of said plurality of paging units represent one-way paging units without RF transmission capability (note; potentiality as defined in Collegiate Dictionary, 10th edit.) over a two-way paging network;

However, Gaulke discloses, in the art of paging system, the paging unit, in which one or more of said plurality of paging units represent one-way paging units without RF transmission capability over a two-way paging network (Col. 2, lines 25–30; col. 5, line 31 to col. 6, line 60, one-way paging unit associated with pager receiver 122) for the purpose of registration. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include the paging unit, in which one or more of said plurality of paging units represent one-way paging units without RF transmission capability over a two-way paging network in the device of Sakamoto as evidenced by Gaulke because Sakamoto suggests each of said paging units further comprises a memory storing and Gaulke teaches the paging unit, in which one or more of said plurality of paging units represent one-way paging units without RF transmission capability over a two-way paging network for the purpose of registration.

Regarding claim 2, Sakamoto continues, as disclosed in claim 1, to disclose the system wherein each of said paging units (col. 22, lines 29–38, mobile station confirming the base station or transmission station) has memory storing the information representing the registered transmission system of the paging unit, and updates said memory of the paging unit in accordance with the information representing the updated transmission system received from the controller (.

Regarding claim 3, Sakamoto continues, as disclosed in claim 1, to disclose said updating and sending means of the controller (col. 22, lines 13–24, base station memory storing the location of the mobile station), updating the registration, responsive to the sending means of each of the paging units, to one of the transmission systems provided in the information from said sending means of the paging unit and another of the transmission systems having approximately the same coverage area as the transmission system identified by the information from said sending means of the paging unit.

4. Regarding claim 4, Sakamoto continues, as disclosed in claim 1, to disclose each of said transmission systems has a unique identifier and the system message sending means of each of the transmission systems sends the system message having at least the unique identifier for the transmissions system, wherein said unique identifier represents the information uniquely identifying the transmission system (col. 20, lines 29–37, connection between the caller station and called mobile station is associated with shake-hand and unique identifier of transmission or caller station is established; col. 22, lines 29–38, notice signal containing base-station identifier for confirmation purpose to the mobile station).

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5. Regarding claim 5, Sakamoto continues, as disclosed in claim 4, to disclose said unique identifier of each of said transmission systems represents a unique first identifier comprising at least a second identifier representing the coverage area associated with the identifier in said wide area and a third identifier representing the frequency of transmission of the transmission system (Fig. 3, lines 28–53, base-station identifiers in PMA.sub-k. for establishing communication with the called mobile station or pager; col. 18, lines 46–67, base-station frequency band being transmitted to a pager for tuning to base-station frequency band).

6. Regarding claim 6, Sakamoto continues, as disclosed in claim 5, to disclose each of the paging units has a receiver which, responsive to receiving the first identifier of the updated transmission system registered to the paging unit from the controller, is set to receive paging messages and system messages for the frequency of transmission in accordance with the third identifier of the first identifier of the updated transmission system (Fig. 3, col. 18, lines 46–67, base-station frequency band being transmitted to a pager for tuning to base-station frequency band (or third identifier)).

7. Regarding claim 7, Sakamoto continues, as disclosed in claim 4, to disclose the sending means of each of the paging unit sends at least information including said first identifier of the transmission system of the received system message, and the updating and sending means of the controller, responsive to the sending means of each of the paging units, updates the registration of the paging unit to the first identifier of the transmission system having at least the second identifier which is the same as the second identifier of the first identifier received from the sending means of the paging unit (col. 18, lines 56–67, base-station receiving the information from pager).

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8. Regarding claim 8, Sakamoto continues, as disclosed in claim 5, to disclose the sending means of each of the paging unit sends at least said information including said first identifier of the received system message, and the updating and sending means of the controller, responsive to the sending means of each of the paging units, updates the registration of the paging unit to the first identifier of the transmission system having the second identifier which is the same as the second identifier of the first identifier received from the sending means of the paging unit and the third identifier representing the frequency of the transmission system having available page messaging capacity in the coverage area associated with the second identifier of the first identifier received from the sending means of the paging unit (col. 18, lines 246–67, information from the mobile station is transmitted at first and second identified base-station and subsequent frequency band as third identifier).

9. Regarding claim 9, Sakamoto continues, as disclosed in claim 1, to disclose one or more of the transmission systems have approximately the same coverage area, and said transmission systems having approximately the same coverage area operate on different transmission frequencies (col. 1, lines 11–18, repeated use of same frequency without causing interference; col. 18, lines 46–67, different frequency bands between adjacent cells) in which at least one transmission system in each of the coverage areas in said wide area operates on a common frequency, and each of said paging units are capable of receiving the system messages and the page messages on the transmission frequency of the registered transmission system of the paging unit.

10. Regarding claim 10, Sakamoto continues, as disclosed in claim 9, to disclose each of said paging units, responsive to receiving an updated registered transmission system, receives the system messages and the page messages on the transmission

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frequency of the updated transmission system (col. 18, lines 46–67, frequency associated with the base-station; col. 20, lines 29–34, communication is enabled between call and called).

11. Regarding claim 11, Sakamoto continues, as disclosed in claim 1, to disclose said updating and sending means of the controller sends the information representing the updated transmission system to the paging unit in a confirmation message (col. 22, lines 29–38, mobile station receiving confirmation from the base-station).

12. Regarding claim 12, Sakamoto continues, as disclosed in claim 11, to disclose said updating and sending means of the controller sends the confirmation message by routing the confirmation message through the transmission system identified by the sending means of the paging unit (Fig. 16, confirmation associated with radio channel assignment response).

18. Regarding claim 18, Sakamoto continues, as disclosed in claim 4, to disclose said unique identifier of each of said transmission systems represents a unique first identifier, each of said paging units has a unique unit identifier, and said sending means in each of said paging units comprises: means for sending to the controller (col. 18, lines 46–67, notifies the unique identifier to control apparatus (30) via base station) at least the unit identifier of the paging unit and the first identifier of the transmission system from the received system message sent from one of the transmission systems different than the transmission system to which the paging unit is registered.

19. Regarding claim 19, Sakamoto continues, as disclosed in claim 18, to disclose said routing database (Fig. 9, col. 21, line 34 to col. 22, line 65, plural control apparatuses (30s) containing routing database or registration information associated

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with mobile unit or pager) associates the unit identifier of each of said paging units to the first identifier of the transmission systems to which the paging unit is registered.

20. Regarding claim 20, Sakamoto continues, as disclosed in claim 19, to disclose said updating and sending means of the controller revises the routing database to register the paging unit of the received unit identifier to one of the first identifier of the transmission system in the information received from the sending means of the paging unit, and the first identifier of the transmission system having approximately the same coverage area as that associated with the first identifier of the transmission system in the information received from the sending means of the paging unit (Fig. 9, col. 22, lines 3-13, pager unit ID to the base station as confirmation message and to the control apparatuses).

21. Regarding claim 21, Sakamoto continues, as disclosed in claim 1, to disclose said sending means of each of the paging units comprises means for notifying the user of the paging unit of the need to update the registration of the paging unit (col. 22, lines 3-13, transmitting the ID to the base station in response to periodical update request from the base station).

22. Regarding claim 22, Sakamoto continues, as disclosed in claim 1, to disclose one or more of said paging units represent two-way paging units (col. 18, lines 46-67, receiving signal from and transmitting the location registration ID to the base station); one or more of said transmission systems have a two-way paging receiver network capable of communication with the two-way paging unit when located in their coverage areas; and said sending means of each of the paging units comprises means for sending, via the two-way paging receiver network of one of the transmission system, to the controller at least the information identifying the transmission system

from the system message received from one of the transmission systems different from the registered transmission system of the paging unit.

23. Regarding claim 23, Sakamoto continues, as disclosed in claim 22, to disclose each of said transmission systems further sends information in said system message indicating whether the transmission system has a two-way paging receiver network; and said sending means of the paging units representing two-way paging units communicate to the controller via one of the two-way receiving network, when the received system message sent from one of the transmission systems other than the transmission system to which the paging unit is registered has the information indicating a two-way paging receiver network is available, and telephonic-based connection to the controller (col. 1, lines 5-8, portable telephone system; col. 18, lines 46-67, receiving signal from and transmitting the location registration ID to the base station).

24. Regarding claim 24, Sakamoto continues, as disclosed in claim 1, to disclose each of said transmission systems further comprises a time source for provide time information, and sends in said system message the time of transmission of the system message in accordance with said time information; and said paging units each have a clock which is maintained in correspondence with the time of transmission of one or more of the system messages received by the paging unit (col.37, lines 29-47, communication time of mobile station is transmitted to the base-station).

25. Regarding claim 25, Sakamoto continues, as disclosed in claim 1, to disclose each of said transmission systems further sends in said system message at least one access number associated with the controller (col. 9, lines 44-53, selection process defines the access number associated with the selected controller).

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26. Regarding claim 26, Sakamoto continues, as disclosed in claim 25, to disclose said sending means of each of said paging units connects to the controller in accordance with the access number of the received system message to send data representing at least the information from the received system message identifying the transmission system which sent the received system message (col. 18, lines 46-67, 44-53, receiving ID of the mobile station the base station access the controller via access number or address number).

27. Regarding claim 27, Sakamoto continues, as disclosed in claim 25, to disclose said access number represents a telephone number associated with the controller (col. 1, lines 5-8, a telephone number associated with portable telephone).

28. Regarding claim 28, Sakamoto continues, as disclosed in claim 1, to disclose said sending mean of each of said paging units comprises an audio interface integrated on the paging unit capable of transmitting audio signals for establishing a telephonic connection to the controller and transmitting data to the controller (col. 1, lines 5-8, audio signals or dial tones associated with portable telephone).

29. Regarding claim 29, Sakamoto continues, as disclosed in claim 1, to disclose said sending means of each of said paging units further comprises: an external interface for sending signals; and a device for receiving said signals and establishing a connection with the controller for transmitting data (Fig. 3, col. 9, lines 30-40, antenna associated with mobile station as an external interface).

30. Regarding claim 30, Sakamoto continues, as disclosed in claim 29, to disclose said device represents one of a cell (col. 1, lines 5-8, portable telephone in the cell) and land telephone (col. 1, lines 5-8, land telephone connected to telephone system)

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capable of receiving said signals from said external interface (Fig. 3, antenna of mobile station).

31. Regarding claim 31, Sakamoto continues, as disclosed in claim 1, to disclose said sending means of each of said paging units further comprises means for transmitting data to the controller via a telephonic connection enabled by the user of the paging unit (col. 1, lines 5-8, portable telephone).

33. Regarding claim 33, Sakamoto continues, as disclosed in claim 1, to disclose said sending means of each of said paging units further comprises means for automatically establishing telephonic connection to the controller for transmitting data (col. 1, lines 5-8, portable telephone).

34. Regarding claim 34, Sakamoto continues, as disclosed in claim 1, to disclose one or more control input units which receives data from the sending means of each of the paging units and transmits said received data to said controller representing at least information which uniquely identifies the transmission system having sent the last system message received by the paging unit and uniquely identifies the paging unit (col. 12, lines 40-67, past history of movements of the mobile station is known by the controllers in the mobile communication system).

35. Regarding claim 35, Sakamoto continues, as disclosed in claim 1, to disclose said sending means of each of said paging units sends data to said controller by one of a telephonic-based connection and a two-way paging network (col. 1, lines 5-8, portable telephone system is two-way and networked).

36. Regarding claim 36, Sakamoto continues, as disclosed in claim 1, to disclose at least one message input unit for receiving page messages for the controller having information designated to one or more of said paging units for routing to the

transmission systems to which the paging units are registered (col. 4, line 63 to col. 5, line 6, paging message for establishing connection).

37. Regarding claim 37, Sakamoto continues, as disclosed in claim 1, to disclose said memory of the controller stores a group database identifying groups of one or more of said paging units under unique group identifiers, and said controller further comprises means for receiving a page message referencing one of the group identifiers (col. 9, line 41 to col. 10, line 47, grouping messages according to priority level numbers 1-k, PMA-1 to PMA-k; col. 12, lines 16-26, group of messages with different priority via level number) and routing said page message to each of the paging units of group in accordance with said group database through the registered transmission system of the paging unit in accordance with the routing database (Fig. 9, col. 21, line 34 to col. 22, line 65, control apparatuses containing route or registration information associated with mobile unit or pager).

38. Regarding claim 38, Sakamoto continues, as disclosed in claim 37, to disclose each of said paging units has a unique unit identifier and further comprises means for receiving paging message addressed to one of the unit identifier for the paging unit and one of the group identifiers to which the paging unit is associated (col. 9, line 41 to col. 10, line 47, grouping messages according to priority level numbers 1-k, PMA-1 to PMA-k; col. 12, lines 16-26, group of messages with different priority via level number; a plural mobile stations in a specific cell being group addressed; a group according to one of levels 1, 2, .., k).

39. Regarding claim 39, Sakamoto continues, as disclosed in claim 1, to disclose the information in each of the system messages which uniquely identifies the transmission system sending the system message comprises a regional identifier representing the

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coverage area of the transmission system, a frequency identifier representing the frequency at which the transmission system operates for transmitting page messages, and a system identifier distinguishing said system from any other systems for providing page message to paging units (col. 9, line 28 to col. 10, 47, a plural mobile stations in a specific cell being group addressed).

40. Regarding (amended) claim 40, Sakamoto continues, as disclosed in claim 1, to disclose each of said paging units further comprises: a paging receiver for receiving paging messages and system messages when located in the coverage area of at least one of the transmission systems; means for decoding received system messages and received paging messages when addressed to the paging unit; and a paging unit controller for enabling said determining mean and sending means (col. 20, lines 29–37, establishing communication between called and caller).

41. Regarding claim 41, Sakamoto continues, as disclosed in claim 1, to disclose said means for sending periodic system messages for each of said transmission systems comprises: a time source for providing date and time; a system message generator for generating periodically the system messages having said information uniquely identifying said transmission system and said date and time from said time source; a paging encoder for encoding generated system messages in accordance with a paging protocol; a regional controller for formatting the encoded system messages; and one or more transmitter sites having antennas which broadcast said formatted encoded system messages in the coverage area of the transmission system (col. 21, line 34 to col. 22, line 50, a mobile station periodically receiving a notice signal associated with specific mobile station; col. 25, lines 19–26, exchanging time stamps associated with mobile communication system).

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42. Regarding claim 42, Sakamoto continues, as disclosed in claim 41, to disclose said means for sending page messages for each of said transmission systems includes said paging encoder for encoding page messages received from the controller, said regional controller for formatting the encoded page messages, and said one or more transmitter sites for broadcasting said formatted encoded page messages (col. 9, lines 41–43, a paging system; col. 25, lines 52–63, communication is started between caller and called (or pager)).

45. Regarding claim 45, Sakamoto continues, as disclosed in claim 43, to disclose one or more of the transmission systems have approximately the same coverage areas and said transmission systems having approximately the same coverage areas operate on different frequencies to send paging messages and system messages; at least one of said transmission systems in each different coverage area operates on a common frequency; each of the paging units are capable of receiving page messages and system messages on the different frequencies; and each of the paging units after entering the no service state reset the frequency of reception to the common frequency (col. 18, lines 46–67, different frequency bands between adjacent cells).

46. Regarding claim 46, Sakamoto continues, as disclosed in claim 1, to disclose said controller further comprises: a time source for providing date and time; a message database stored in said memory of the controller having copies of each page message routed to each of the paging units with the time from said time source that the page message was routed (col. 15, line 56 to col. 16, line 62, sending stored messages according to the allowance of connection delay).

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47. Regarding claim 47, Sakamoto continues, as disclosed in claim 1, to disclose each of said paging units represent one of one-way or two-way paging units (col. 1, lines 5-8, portable telephone system is two-way and networked). .

48. Regarding claim 48, Sakamoto continues, as disclosed in claim 1, to disclose the information sent in the system message from each of the transmission systems uniquely identifying the transmission system represents a unique identifier for the transmission system, and each of said paging units further comprises: memory storing at least the identifier of transmission system to which the paging unit is registered; and said determining means has means for comparing the identifier stored in said memory with the identifier of each received system message to determine when the paging unit receives one of the system messages sent from one of said transmission systems different from the transmission system to which the paging unit is registered (col. 15, line 56 to col. 16, line 62, sending stored messages according to the allowance of connection delay via the identified transmission system).

49. Regarding claim 49, Sakamoto continues, as disclosed in claim 1, to disclose each of said transmission systems comprises one or more transmission sites in the coverage area associated with the transmission system for enabling page messages to reach the paging units in the coverage area associated with the transmission system (col. 15, line 56 to col. 16, line 62, sending stored messages according to the allowance of connection delay via the identified transmission system).

50. Regarding claim 50, Sakamoto disclose a system for providing page messages to radio paging units (Fig. 9, col. 21, line 34 to col. 22, line 65, a mobile station (or pager) and caller) over a wide area through a plurality of regional transmission systems ,said system comprising: means for routing page messages to each of said paging

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units through one of said transmission systems to which the paging unit is registered, each of said paging units being registered to one of said transmission systems (Fig. 9, col. 21, line 34 to col. 22, line 65, control apparatuses containing routing database or registration information associated with mobile unit or pager); a plurality of transmission systems having coverage areas in said wide area in which each of said transmission systems sends page messages received from the controller to paging units located in their associated coverage area (Fig. 9, col. 21, line 34 to col. 22, line 65, associated cell) and sends a periodic system message (col. 22, lines 29–38, periodic notice signal from base station received by the mobile station) having information which uniquely identifies the transmission system to paging units (col. 22, lines 25–50, the base station memory (36) containing mobile station ID associated with the base station cell) located in their associated coverage area; a plurality of paging units capable of receiving page messages and system messages when located in the coverage area of at least one of the transmission systems in which each of said paging units, when receiving at one of the system messages sent from one of said transmission systems different from the transmission system to which said paging unit is registered (col. 22, lines 29–38, different cell or coverage area), transmits to the controller at least the information from the received system message identifying the transmission system; and said routing means (Fig. 16, routing confirmation associated with radio channel assignment response; col. 22, lines 3–13, receive and transmit ID signal of pager) in response to each of said paging units comprises means for re-registering the paging unit to one of the transmission systems whose coverage area the paging unit has entered in accordance with the information received from the paging unit (col. 22, lines 29–38, cell change request by the mobile station).

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51. Regarding claim 51, Sakamoto continues, as disclosed in claim 50, to disclose said re-registration means further comprises means for sending to the paging unit information having at least the transmission system to which the paging unit is re-registered (col. 22, lines 29-50, registering the mobile station again at another base station associated with new cell).

53. Claim 53 recites a method of operation corresponding to wide area radio paging system of claims 50-51. The method claimed is obvious in that it parallels the implementation of wide area radio paging system indicated in claims 50-51 in performing each of the functional operations of wide area radio paging system. Accordingly, the inventive embodiments set forth in claim 53 are met by the references and associated arguments as set forth above and incorporated herein. Therefore, it is considered that rejection of the limitations expressed in claim 53 would have been obvious to the artisan of ordinary skill at the time of the invention for the reasons given in rejection of claims 50-51.

Claims 54-55 recites a method of operation corresponding to wide area radio paging system of claims 50 and 52-53. The method claimed is obvious in that it parallels the implementation of wide area radio paging system indicated in claims 50 and 52-53 in performing each of the functional operations of wide area radio paging system. Accordingly, the inventive embodiments set forth in claims 54-55 are met by the references and associated arguments as set forth above and incorporated herein. Therefore, it is considered that rejection of the limitations expressed in claims 54-55 would have been obvious to the artisan of ordinary skill at the time of the invention for the reasons given in rejection of claims 50 and 52-53.

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56. Regarding claim 56, Sakamoto continues, as disclosed in claim 55, to disclose the method further comprising the step of updating said first database to associate one of the paging units with another of the transmission systems after the one paging unit moves into the coverage area of one of the transmission systems different from the transmission system to which the paging unit is registered (col. 22, lines 29–50, registering the mobile station again at another base station associated with new cell).

57. Regarding claim 57, Sakamoto disclose a controller for routing messages to radio paging units in a wide area paging system (col. 21, line 34 to col. 23, line 23, control apparatuses (30–1,...,) having one or more transmission systems with coverage areas in the wide area (col. 23, lines 3–15, plural cells associated with coverage areas), in which the radio paging units can detect when they have moved into a new coverage area of one of the transmission systems and communicate to the controller information related to the transmission system of the new coverage area (col. 22, lines 29–50, cell change to a new cell), said controller comprising: memory storing a routing database registering each of said paging units with one of said transmission systems (col. 22, lines 29–50, control apparatus containing base station memory for directing to a specific base station associated with the mobile station) ; means for routing page messages to each of said paging units through one of said transmission systems to which the paging unit is registered in accordance with said routing database (col. 22, lines 29–50, control apparatus containing base station memory or routing database); and means, responsive to the receiving a communication from the paging unit with information related a coverage area, for updating the registration of the paging unit in the routing database to one of the transmission systems in accordance with the information received from the sending means of the

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paging unit (col. 22, lines 29–50, updating the base station memory as the mobile station moves to neighboring cells), and sending to the paging unit at least information representing the updated transmission system registered to the paging unit (col. 18, lines 46–67, new frequency information associated with updated transmission system).

58. Regarding claim 58, Sakamoto discloses a radio paging unit for receiving messages from one or more regional transmission systems in a wide area in which each radio paging unit is registered to one of the transmission systems for receiving paging message from the transmission system (col. 21, lines 34 to col. 23, line15, sending ID to base station upon receiving notice signal from base station), and each transmission system sends a periodic system message identifying the transmission system (col. 21, lines 34 to col. 23, line15, sending ID to base station upon receiving periodic notice signal from base station), said radio paging unit comprising: means for receiving the system messages of at least one of the transmission systems when the paging unit is located in the associated coverage area of said one transmission systems (col. 21, lines 34 to col. 23, line15, a new cell associated with cell change), and receiving the page messages sent from the transmission system registered to the paging unit when the paging unit is located in the coverage area of the transmission system registered to the paging unit (col. 21, lines 34 to col. 23, line15, a new cell associated to new coverage area is stored in the control apparatus (30)); means for determining when the paging unit receives at least one of the system messages sent by one of said transmission systems (col. 22, lines 3–13, notice signal associated with the current transmission system) different from the transmission system registered to the paging unit; and means, responsive to said determining means, for sending to the

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controller at least the information uniquely identifying the transmission system from said received system message sent by one of said transmission systems different from the transmission system registered to the paging unit.

59. Regarding claim 59, Sakamoto continues, as disclosed in claim 22, to disclose said sending means of the paging units representing two-way paging units (col. 18, lines 46-67, receiving signal from and transmitting the location registration ID to the base station) is capable of communicating through a telephonic-based connection (col. 1, lines 5-8, portable telephone system, cordless telephone system) to the controller when the paging unit is located in the coverage area of any one of the transmission systems.

60. Regarding claim 60, Sakamoto continues, as disclosed in claim 1, to disclose the system message is embedded in the radio paging protocol used by one or more of said transmission systems (col. 22, lines 3-41, notice signal).

61. Regarding claim 61, Sakamoto continues, as disclosed in claim 53, to disclose the system message sent by each of the, transmission systems is embedded in the radio paging protocol used by at least one of said transmission systems (col. 22, lines 3-41, notice signal).

Claims 13-17, 43-44 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Gaulke as applied to claim 1, and further in view of Neustein (6,418,305).

13. Regarding claim 13, Sakamoto continues, as disclosed in claim 1, to disclose each of said paging units further comprises a memory storing ID (col. 2, lines 16-42, ID of paging unit). But Sakamoto in view of Gaulke does not disclose memory and means for recording one or more time periods in said memory of the paging unit when

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the reception of page messages is unlikely in accordance with the paging unit not receiving the system message of the transmission system to which the paging unit is registered within a predefined interval.

However, Neustein discloses, in the art of paging system, memory and means for recording one or more time periods in said memory of the paging unit when the reception of page messages is unlikely in accordance with the paging unit not receiving the system message of the transmission system to which the paging unit is registered within a predefined interval to extend battery life time (col. 7, line 7 to col. 8, line 13, pager apparatus in power-down mode for predetermined time interval) to extend the range of communication with the tag or transponder. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include memory and means for recording one or more time periods in said memory of the paging unit when the reception of page messages is unlikely in accordance with the paging unit not receiving the system message of the transmission system to which the paging unit is registered within a predefined interval in the device of Sakamoto as evidenced by Neustein because Sakamoto in view of Gaulke suggests each of said paging units further comprises a memory storing and Neustein teaches memory and means for recording one or more time periods in said memory of the paging unit when the reception of page messages is unlikely in accordance with the paging unit not receiving the system message of the transmission system to which the paging unit is registered within a predefined interval to extend battery life time.

14. Regarding claim 14, Neustein continues, as disclosed in claim 13, to disclose said sending means of each of said paging units further comprises means for sending

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to the controller data representing said time periods in said memory of the paging unit (col. 18, lines 22–26, data representing down time (5 minutes minus 3 seconds)).

15. Regarding claim 15, Neustein continues, as disclosed in claim 13, to disclose each of said paging units further comprise means for sending to the controller data representing said time periods in said memory of the paging unit when one of a certain input from the user of the paging unit is received by the paging unit, and one or more of said time periods exceed a predefined interval (col. 18, lines 22–26, data associated synchronization process).

16. Regarding claim 16, Neustein continues, as disclosed in claim 13, to disclose said recording mean of each of said paging units further records one or more time periods when the paging unit is logically off (col. 7, line 7 to col. 8, line 13, pager apparatus storing predetermined time interval associated with sleep mode).

17. Regarding claim 17, Neustein continues, as disclosed in claim 14, to disclose said controller further comprises: a time source for providing time information; a message database stored (col. 7, line 7 to col. 8, line 13, controller remembering when to transmit message to mobile station) in said memory of the controller having copies of each of the page messages routed to each of the paging units with at least the time information from said time source when the page message was routed; and means for receiving the data representing said time periods and resending any page messages sent during said time periods to the paging unit which sent the data in accordance with said message database (col. 7, line 7 to col. 8, line 13, pager apparatus in power-down mode for predetermined time interval; pager apparatus storing predetermined time interval associated with sleep mode).

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43. Regarding claim 43, Neustein continues, as disclosed in claim 1, to disclose each of said paging units when not receiving said system message from the transmission system (col. 7, line 7 to col. 8, line 13, controller remembering when to transmit message to mobile station) to which said paging unit is registered within a predefined interval enters a no service state until one of the system messages from the transmission system to which said paging unit is registered is again received, and said paging unit receives from said controller information identifying the updated transmission system registered to the paging unit (col. 7, line 7 to col. 8, line 13, pager apparatus in power-down mode for predetermined time interval; pager apparatus storing predetermined time interval associated with sleep mode).

44. Regarding claim 44, Neustein continues, as disclosed in claim 43, to disclose said paging units each further comprises: a time source for providing time information; memory; and means for recording one or more time periods in an array in said memory in accordance with said time source when the paging unit is in the no service state (col. 7, line 7 to col. 8, line 13, pager apparatus storing predetermined time interval in the arrayed memory associated with sleep mode).

52. Regarding claim 52, Neustein continues, as disclosed in claim 50, to disclose means for maintaining in a database (col. 7, line 7 to col. 8, line 13, controller remembering when to transmit message to mobile station) copies of each of the page message routed to one or more of said paging units with the time routed; means in at least one of the paging units for determining any time periods in which system messages were not received after a predefined interval from the transmission system to which the paging unit is registered; and means for sending from the database

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copies of any page messages sent to a paging unit which were routed during any of said time periods.

2. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Gaulke as applied to claim 31, and further in view of Downen et al. (6,389,114).

3. Regarding claim 32, Sakamoto continues, as disclosed in claim 31, to disclose said sending means of each of said paging units further comprises means for transmitting data to the controller via a telephonic connection enabled by the user of the paging unit. But Sakamoto in view of Gaulke does not disclose said transmission means of one or more of said paging units further comprise one or more push buttons on the paging unit to establish said telephonic connection and send data to the controller.

However, Downen discloses, in the art of paging system, said transmission means of one or more of said paging units further comprises one or more push buttons on the paging unit to establish said telephonic connection and send data to the controller (col. 5, lines 1-4, push-button for sending messages by the two-way pager (126)) to facilitate manual message transmission. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include said transmission means of one or more of said paging units further comprises one or more push buttons on the paging unit to establish said telephonic connection and send data to the controller in the device of Sakamoto in view of Gaulke as evidenced by Downen because Sakamoto in view of Gaulke suggests said sending means of each of said paging units further comprises means for transmitting data to the controller via a telephonic connection enabled by the user of the paging unit and Downen teaches said

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transmission means of one or more of said paging units further comprises one or more push buttons on the paging unit to establish said telephonic connection and send data to the controller to facilitate manual message transmission.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matsuichiro Shimizu whose telephone number is (703) 306-5841. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik, can be reached on (703-305-4704). The fax phone number for the organization where this application or proceeding is assigned is (703-305-3988).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-8576).

Matsuichiro Shimizu

December 29, 2003



BRIAN ZIMMERMAN
PRIMARY EXAMINER